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ABSTRACT

Three hypotheses derived from Hilde Bruch's formulations regarding onset differences among the obese were tested. In Bruch's theory, adult-onset, or reactive, obesity is a result of psychological trauma: the individual uses eating as a defense against anxiety and depression. Child-onset, or developmental, obesity results from a mixture of constitutional tendencies and severe emotional disturbances caused by faulty mother-child interactions: the individual uses indiscriminate feeding as a response to many distress states. It was hypothesized that: (1) adult-onset obese persons more often report weight gain due to significant life events: (2) child-onset obese persons are more depressed and anxious than adult-onset obese persons: and (3) child-onset obese persons have a more external locus of control. None of the hypotheses was supported, although the sample was quite different from the psychiatric patients observed by Bruch. An additional hypothesis derived from Bruch's observations regarding birth order--that child-onset obesity occurs more frequently among only or youngest child--did receive support. The findings also supported differentiations between adolescent-onset and child-onset obesity. (Author/CS)

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Onset Age of Obesity and Variables of Personality and Biography[1]

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This paper is based on a dissertation submitted to the University of Maryland, Department of Human Development, in partial fulfillment of the requirements for a doctoral degree. The author is indebted to Dr. James Gormally of the University of Maryland for allowing access to the overweight women in his clinic, and for his advice and suggestions. The author is also appreciative of Dr. Bonnie Tyler of the University of Maryland for many helpful discussions.

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Classification of obese people into separate groups depending on whether obesity began in childhood or in adulthood seems reasonable in view of the findings of investigators which indicate that the adipose tissue of obese people differ depending on when obesity began, with an increased number of fat cells associated with a childhood onset of obesity, and a normal component of fat cells associated with adult onset of obesity (Salans & Cushman, 1975). While the origin of child-onset obesity presumably requires a genetic predisposition, there is evidence that early nutrition can be a contributing factor (Knittle, 1975).

While few psychodynamic theories of obesity lend themselves to these findings, one theory is compatible with the data on adipose tissue differences between onset groups. Bruch (1973) has built a theory based on the distinctiveness of obesity which begins in childhood or adolescence, called developmental obsity, from obesity which begins in adulthood, called reactive obesity. The latter, she suggests, is frequently a result of psychological trauma in which the individual uses eating as a mechanism to fight anxiety and depression. Developmental obesity, on the other hand, is viewed as often resulting from an intermingling of constitutional tendencies and severe emotional disturbances which result from faulty mother-child interactions in which the infant may give weak cues as to his/her feeling states, and/or the mother may respond inappropriately to the infant's cues, leaving the child with feelings of helplessness, ineffectiveness and without hunger awareness. One result of this development is the indiscriminate feeding as a response to many distress states. While Bruch discusses obesity during adolescence, an etiology distinct from child-onset obesity is not made explicit.

In addition to her theoretical position on onset differences, she has also made several observations regarding child-onset obese people. She has observed that the faulty mother-child interactions are more likely to occur when the child is in an only or youngest birth order, and that a good prognosis for future weight control among overweight children is an accepting family attitude regarding the child's obesity.

While several studies into onset differences among the obese have had interesting results (Leon & Roth, 1977), they have not addressed themselves to Bruch's theory, and their findings are complicated by onset classifications which are variable as to the adolescent-onset group, sometimes including that group in child-onset obese and sometimes not.

This investigation examined three onset categories with respect to five hypotheses developed from Bruch's theory and

observations. Because Bruch believes that adult-onset obesity is linked to response to trauma, it was felt that people with adult-onset obesity would be more likely to gain weight due to some event in their lives than would other onset groups. Therefore, the first hypothesis was: Adult-onset obese individuals more often report weight gain due to significant life events than do people with other onsets. Another hypothesis was developed from Bruch's formulation that adult-onset obese eat as a defense against depression and anxiety while child-onset obese suffer more pervasive disturbances in their personality development. Therefore, one would expect child-onset obese individuals to appear more depressed and more anxious than would adult-onset obese individuals who are presumably eating as a defense against these feelings. The second hypothesis was: Child-onset obese are more depressed and anxious than are adult-onset obese. Bruch's description of the child-onset obese individual as suffering from helplessness and feelings of ineffectiveness suggest the possibility that such people feel that environmental rewards are not due to their own efforts, a feeling identified as an external locus of control. Therefore, the third hypothesis was: Child-onset obese have a more external locus of control than do adult-onset obese.

Bruch's observation regarding birth order differences among onset groups led to the fourth hypothesis: Child-onset obese are more often in the only or youngest birth order than are other onset groups. An investigation into the effect of parental attitudes on weight control which was suggested by Bruch's observations led to the fifth hypothesis: The maintenance of weight loss is related to the recollection of accepting attitudes for child-onset and adolescent-onset obese people.

In addition to the research hypotheses, an exploration was done on possible biographical differences between overweight individuals and people with no history of weight problems.

Method

Subjects

The overweight subjects consisted of 39 women who were enrolled in a 16-week weight reduction clinic using behavior modification techniques, and then a four-month follow-up which included monthly weight checks. These women had met three criteria for getting into the clinic: age range between 25-45 years; at least 20% overweight by the Metropolitan Life Insurance Tables for medium frame women, but not over 200 lbs. (90.9 kg); reasonable emotional stability as subjectively judged during a screening interview. The average initial overweight was 42.3 lbs. (19.2 kg), and the average weight

loss was 12 lbs. (5.5 kg) (Gormally, Note 1). The women were categorized into three groups based on onset of obesity as verified by pictures, medical records and recollection. The sample included 13 child-onset women whose obesity had begun prior to menarche, 6 adolescent-onset women whose obesity had begun between menarche and four years post menarche, and 20 adult-onset women whose obesity began after age 19. During the clinic, two adult-onset women and one child-onset woman dropped out, and one child-onset woman became pregnant but continued in the clinic. These women were included in the sample except when the investigation pertained to weight loss, i.e., the fifth hypothesis.

Thirty-four normal weight women were recruited from PTA meetings in a middle class community. Volunteers were requested who were between 25-45 years old and did not have a problem with overweight. They were interviewed in their homes and asked about their biographical and weight history. Four women indicated a previous weight problem and so were not used. The remaining 30 women were within the ideal weight range for small and medium frame as given by the Metropolitan Life Insurance Tables, and none had ever recalled being overweight.

There were no differences between the overweight and normal weight groups in age, marital status, level of education, number of children, or whether or not employed. All lived in the Washington Metropolitan Area.

Procedure

Prior to treatment, a variety of measures was given to the overweight women. These measures included: A personal history questionnaire given individually by interviewers, and included questions as to birth order, recollected weight changes, recollection of early family attitudes about body size, and family weight history; a personality test, the Mini-Mult (Kincannon, 1968), which is a short version of the Minnesota Multiphasic Personality Inventory, and gives scores on three validity scales and eight psychiatric scales two of which measure anxiety and depression (Duckworth & Duckworth, 1975); and the Rotter IE (Rotter, 1966) which measures the extent to which an individual believes that environmental rewards are independent of his/her own efforts. The latter two measures were given the women in a group teseting format. The women had 16 weeks of weekly treatment including meetings, weight checks, and learning behavioral techniques for weight loss. Thereafter was a four month follow-up which included monthly weight checks.

The normal weight women were seen individually in their homes and asked a variety of biographical questions including birth order, weight history, and family weight history.

Results

Hypothesis 1: There were no differences among the onset groups in reported weight gain due to life events, excluding pregnancy.

An additional analysis comparing reported weight gain or weight loss due to life events among the onset groups showed no differences.

Hypothesis 2: There were no significant differences found among the onset groups on the clinical scale of depression or the clinical scale of psychasthenia, which measure depression and anxiety respectively.

A further analysis showed no differences among the onset groups on any of the other clinical scles of the Mini-Mult. However, there was a significant difference found on one of the validity indicators. the FK Index, $F = 3.58$, $df = 2, 36$, $p < .05$. Scheffe's test at the .05 level of confidence indicated the adolescent-onset group to be significanly lower on this Index than the child-onset group. See Table 1.

Table 1

Onset Group Means and Standard Deviations on the FK Index of Mini-Mult

Group	n	M	SD
Child-onset	13	- 8.54	5.83
Adolescent-onset	6	-15.00	1.90
Adult-onset	20	-10.30	4.81

An additional analysis combining child-onset and adolescent-onset and comparing to adult-onset showed no differences on any of the scales.

Hypothesis 3: There were no significant differences found among the onset groups on the Rotter IE.

Hypothesis 4: A contingency table analysis was done on birth order (only or youngest vs. other orders). The resulting chi square of 5.19 had marginal significance, $p = .07$. The table showed the child-onset group to have over half of the subjects in the only or youngest positions, while none of the adolescent-onset women and about one-third of the adult-onset women were in that birth order.

Hypothesis 5: For this hypothesis, ten women were used. All were child-onset or adolescent-onset and all had been successful in losing at least 12 pounds (5.5 kg) during the treatment. A comparison of the weight at the end of the 16-week clinic and the weight at the end of the four month follow-up constituted the measure of maintenance of weight loss. Women who recollected negative parental attitudes about the subject's overweight regained more weight than did those who recollected accepting parental attitudes ($t = 1.56$, $p < .10$), although the level of significance is marginal.

Additional analyses were done regarding parental attitudes and the amount of weight lost in treatment and the onset age. Those women who recalled negative parental reactions lost significantly more weight than those who recalled accepting attitudes ($t = 2.81$, $p < .05$), and were older when obesity began ($t = 1.93$, $p < .10$).

A supplementary analysis was done on a variety of biograhpical and historical items comparing the overweight and normal weight women. No differences were found in incidence of only or youngest birth order, loss of parent before adolescence, or recalled gain or loss of weight due to life events excluding pregnancy. However, significant differences were found on the incidence of parental overweight. For the purpose of analysis, the child-onset and adolescent-onset obese groups were combined into a juvenile-onset group and compared with the adult-onset and normal weight women on whether any, either, or both parents had ever had a weight problem.

Table 2
Incidence of Parental Overweight Among Juvenile-onset, Adult-onset, and Normal Weight Women

Parental Overweight	Onset Category		
	Normal	Adult	Juvenile
No parental overweight	18	11	1
One parent overweight	12	3	14
Two parents overweight	0	4	4

Contingency table analyses showed a distinction among the three categories (Chi square = 22.83, $df = 4$, $p < .005$) with juvenile-onset women reporting a higher incidence of parental obesity than adult-onset women (Chi = 15.44, $df = 2$, $p < .005$), and adult-onset women reporting a higher incidence than normal weight women (Chi = 8.63, $df = 2$, $p < .01$).

Discussion

None of the three hypotheses specifically derived from Bruch's theory were supported in this study, although this sample was small, all female, and quite different from the psychiatric patients on which Bruch made her observations. Two hypotheses derived from her observations received marginal support. Thus child-onset obese individuals were more likely to be only or youngest children than were adolescent-onset or adult-onset obese individuals, and child-onset individuals who recall parental acceptance maintained absolute weight loss better than did child-onset individuals who recall negative parental attitudes. However, this finding may be explained by the greater weight loss of the latter group.

There were several additional findings which suggest that adolescent-onset may be different from child-onset obesity even though both groups share the experience of overweight during adolescence. First was the finding that the adolescent-onset group had a lower FK Index than the child-onset group. This Index was developed in order to detect faking bad and faking good on the MMPI. Positive scores above 9 indicate a faking bad profile, while negative scores indicate a faking good profile (Duckworth & Duckworth, 1975). However, scores in the negative direction are difficult to interpret and could indicate a general feeling of well-being rather than faking good. Future studies investigating test taking attitudes and onset of obesity may help in interpreting this result. Another pertinent finding was that people who recall negative parental attitudes about overweight tended to be closer to adolescence at the onset of obesity than were those who recall accepting attitudes. Although adolescent obesity has been found to be crucial for the development of body image disturbance (Stunkard & Burt, 1967), no study has looked at onset in adolescence as a unique group different from child-onset people who are also overweight during adolescence. These findings suggest that there may be differences between those whose obesity began prior to adolescence and those whose obesity began in adolescence.

An unanticipated finding was that of the differences among the onset groups with regard to the incidence of parental overweight. While the greater incidence found in child-onset individuals is compatible with Bruch's theory, the importance of family overweight in adult-onset obese suggest that Bruch's analysis of reactive obesity may be restricted to a subset of people with that onset.

In summary, this investigation examined five hypotheses

derived from Bruch's theory and observations regarding onset of obesity and personality. While none of the hypotheses derived from her theory were confirmed, the hypothesis derived from her observations regarding birth order in childhood onset of obesity received support as did the hypothesis based on her observation of the importance of accepting parental attitudes. The importance of differentiating between the child-onset obese group and the adolescent-onset obese group was suggested by the findings of differences in test taking attitudes, in birth order, and in recollection of accepting parental attitudes. An additional finding that adult-onset obese have a higher incidence of parental obesity than do normal weight women suggest that Bruch's theory regarding adult-onset of obesity may have limited generalizability.

Onset Age
8

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